Appendix 2 – Market Opportunities and Implementation Strategy by Scenario

The proposed technology architecture is relevant across all the market scenarios but the distinct features and capabilities of each market may lend itself to tailored implementation approaches. This appendix identifies tactics Cal eConnect should use to coordinate with partners and drive adoption of core services in each of the scenarios.

Rural Health Information Exchange Scenario

The rural patient setting is differentiated by the characteristics of the population and geography as much or more than the characteristics of providers seeking to achieve meaningful use. There is a high rate of transfer among rural hospitals, tertiary care hospitals, and specialty clinics – perhaps over significant distances –to obtain appropriate care. This high transfer rate results in a significant need for interoperability and exchange of health information across the various care settings and care providers. The high level requirements for HIT in the Rural Scenario are as follows:

Rural Health Information Exchange Requirements
• Wide spectrum of IT adoption and sophistication • Broadband connectivity • High patient transfer rate • Provide access to patients with limited resources • Finances to support installation of EHR to achieve meaningful use • Greater need for single vendor platform to reduce need to build interfaces • Improved connectivity • Services that support transitions of care • Mechanisms to access resources for both providers and patients without significant IT capabilities or robust connectivity • Financing to support installation of capabilities required to meet meaningful use criteria • Hosted services, including perhaps a hosted EHR, to address lack of local IT capabilities • Highly effective patient matching to manage high level of transitions of care

Unfortunately, this community has a very high degree of variability in IT adoption rates and HIT capabilities and sophistication. Eligible providers are eager to implement EHRs and qualify for incentives, and some EHR vendors are turning to this market as a result of the meaningful use incentive programs. However, rural providers often lack the working capital to use for significant added IT investments that might provide interoperability. Labs and pharmacies are less likely to be integrated or have significant IT capabilities. Providers and patients alike may have limited access to high-speed Internet connectivity.

Rural providers have two primary needs: access to information coming in (e.g., lab results) and transfer of information at transitions of care (e.g., clinical summaries for referrals and admissions, or discharge summaries at transfers to tertiary care or home).

Given these needs, an effective strategy for Cal eConnect in the rural setting suggests four strategic approaches:

1. support access to connectivity in the rural environment, through programs outside of the State HIE Cooperative Agreement Program;

2. support the development and/or expansion of HIOs in rural areas, in conjunction with other organizations, to aid in developing interoperability;

3. support interoperability and the exchange of information at transfers of care through the infrastructure provided by Core Services; and

4. support better access to electronic information through clearinghouses that enable business processes offered as Business Services.

Importantly, because of the disparity in HIT sophistication in rural communities, they have a perhaps greater need for the Business Services that enable business processes. For example the Lab Services can support local labs in transforming and translating structured lab results into the formats accepted by national standards and consumable by EHRs, and route them to an ordering referring physician, the patient's home primary care physician, and the local public health department (if appropriate) on behalf of the lab. Like other Value-Added Services, the Lab Services is dependent upon Core Services, and can be procured as a support grant to a local HIO that offers the service statewide, a development contract to a software developer or systems integrator to create a service that Cal eConnect operates, or a vendor that might develop and operate the service as a business.

The relatively low penetration of EHRs in outpatient practices and hospitals is a significant barrier to the achievement of HIE for meaningful use. Highlighted below are some of the prominent gaps in HIE capabilities needed for meaningful use in 2011.

Rural Market Implementation Strategy for Meaningful Use Achievement

Market Relevant Meaningful Use Criterion	Rural Capacity
1. Generate and transmit permissible prescriptions electronically	While 97% of retail pharmacies affiliated with large chains are connected to the nation's largest proprietary e-prescribing network, only 62% of independent pharmacies are connected. In the rural market, local pharmacies are the main provider and these small pharmacies are not electronically connected. Further, the low penetration of EHRs in physicians' offices makes this even more difficult. One HIO in the Rural Sierra Market has piloted the use of ERx and found it onerous and unsuccessful due to the Medi-Cal requirement of Opt-in consent prior to use. **ACTION**: Work with RHITC and CalHIPSO to develop detailed needs assessment by County and associated matrix of responsibilities between Cal eConnect and CalHIPSO.
2. Incorporate clinical lab-test results into EHR as structured	Between 50% and 60% of outpatient laboratory tests in California are performed by either LabCorp or Quest Diagnostics. The remaining tests are performed by over 17,000 hospitals, regional, public health and

data	provider office laboratories, none of which represent significant market share. In the rural market, most of these hospital and regional laboratories are not prepared to send structured electronic laboratory data to outpatient physicians. **ACTION**: Work with RHITC and CalHIPSO to develop a detailed needs assessment by County.
3. Check insurance eligibility electronically from public and private payers	All of the major payers in California, including Medi-Cal , provide web portals for submitting eligibility inquiries. These portals provide basic eligibility information regarding a member's enrollment status. Some of the portals provide more detailed information about eligibility, including specific covered benefits and/or patient-specific deductible balances is a significant barrier to achieving this criterion. This is not a significant issue or area of focus for Cal E Connect. **ACTION**: None at this time
5. Provide patients with an electronic copy of their health information/discharge instructions upon request	Because of low penetration of EHRs in the rural market, most rural primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). **ACTION**: None at this time
6. Capability to exchange key clinical information among providers of care and patient-authorized entities electronically	There is no universally trusted framework for identity management and authentication of the principals participating in HIE transactions. Where trust relationships exist, they exist only among principals within the same enterprise and among principals in enterprises that have bi-lateral information-exchange agreements, or among principals in enterprises that participate in a regional HIO with a trusted identity-management framework. There are several HIOs operating in the rural market but they represent only a fraction of rural providers and are sharing only limited data elements. **ACTION**: Meet with local HIO leadership and RHITC to determine action plan for Core services.
7. Provide patients with timely electronic access to their health information within 96 hours	Most rural primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). In addition, many rural patients may have limited electronic capabilities. **ACTION:** Coordinate with the Medi-Cal -EHR incentive program to maximize adoption of EHRs in rural primary care practices.
8. Provide summary-of-care record for each transition of care and referral	Because of low penetration of EHRs in the rural market, most rural primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). In addition, rural markets tend to have higher transfer rates as patients are transferred out to tertiary hospitals. There is a need for services that support referrals, transfers and other transitions of care. **ACTION:** Coordinate with the Medi-Cal -EHR incentive program to maximize adoption of EHRs in rural primary care practices. Coordinate with local HIOs and IDNs to help standardize transmission of transition

	data and strategy for Core Services.
9. Capability to submit electronic data to immunization registries and actual submission where required and accepted	3 of California's 9 immunization registries serve primarily rural communities, and none has the capacity to accept immunization data via Health Level 7 (HL7) messaging directly from EHRs. As a result, even as physicians develop the capacity for submission, until the state is able to support the nine registries in exchanging data, the value of the information submitted to each registry region remains locked within that region. **ACTION:** Coordinate with CDPH and CAIR to support cross-registry data exchange for all California immunization registries.
10. Capability to provide electronic submission of reportable lab results to public health agencies and actual submission where it can be received	In the rural market, most hospitals and regional laboratories are not prepared to send structured electronic laboratory data to appropriate public health agencies. **ACTION**: Coordinate with CPDH as they work to implement CalREDIE (California Reportable Disease Information Exchange).
11. Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	In the rural market, most providers are not prepared to send structured electronic laboratory data to appropriate public health agencies. **ACTION**: Coordinate with CPDH as they work to implement CalREDIE (California Reportable Disease Information Exchange), and with CDC as federal electronic reporting standards evolve.
12. Report ambulatory quality measures to CMS or states	This is a function of specific EHR systems or disease registries operated by vendors and/or consortia of providers, which are limited in the rural markets. **ACTION:** None at this time.

Rural Market By County

County	Population	Physicians
Alpine	1344	0
Amador	39,404	57
Butte	223,572	395
Calaveras	46,658	33
Colusa	22,830	12
Del Norte	30,297	35
El Dorado	183,399	203
Fresno	946,353	1,281
Glenn	29,943	13
Humboldt	133,266	243

Imperial	179,798	144
Inyo	19,007	38
Kern	835,007	930
Kings	157,572	119
Lake	65,947	78
Lassen	37,231	35
Madera	154,405	193
Mariposa	18,772	10
Mendocino	91,794	159
Merced	261,587	212
Modoc	10,562	3
Mono	14,351	23
Monterey	427,571	662
Napa	138,956	321
Nevada	101,012	172
Placer	333,998	731
Plumas	21,668	24
San Benito	60,768	35
San Joaquin	70,6857	905
San Luis Obispo	266,205	524
Shasta	186,540	356
Sierra	3,657	1
Siskiyou	46,620	70
Solano	431,525	782
Sonoma	487,575	973
Stanislaus	539,299	764
Sutter	97,800	166
Tehama	63,702	52
Trinity	14,844	7
Tulare	446,533	437
Tuolumne	58,156	97
Yolo	199,279	283
Yuba	76,556	46
Total	**8,212,220**	**11,624**

Urban Health Information Exchange Scenario

The urban market consists of 15 urban counties. There are 4 operational non-rural HIOs in California and 5 more in the planning stages as well as a number of large provider organizations. Certain provider organizations in California are already well integrated and achieving HIE within the scopes of their enterprises and in some cases outside of it. Kaiser Permanente (KP) is one such example. The KP delivery system recently completed a large EHR infrastructure project that enables KP providers and hospitals to share and exchange information with each other, as well as to prescribe, order and receive test results electronically and provide patients access to their own health data through a web portal. Within the Kaiser delivery system, therefore, much of the infrastructure necessary for meaningful use already exists. The same is true for a number of other IDNs. Although few of these IDNs achieve sufficient HIE to support all of the meaningful use goals, they are relatively well positioned to support HIE through their abilities to dictate standards within their organizations, build

customized data interfaces and operate internal infrastructures for authentication and access control. HIE services may enable large provider organizations working multiple EHR implementations and systems to enable interoperable data exchange within the organization itself.

A number of more loosely affiliated, community-based provider organizations, such as IPAs, have also developed HIE capabilities. IPAs provide additional HIE resources, such as data interfaces to local hospitals, administrative web portals that facilitate eligibility checking (especially for capitation patients), and patient web portals that provide patients access to their health information and messaging capabilities with their providers. Although no specific patterns of integration exists across the many different and diverse IPAs, many are providing some or all of these capabilities, with plans to expand these services as the meaningful use incentives create increased demand for HIE. These regional, proprietary, IDN, Hospital, and physician networks represent opportunities that must be leveraged by Cal eConnect in order to maximize HIE capacity in California and allow as many eligible hospitals and providers as possible to meet HIE-dependent meaningful use criteria.

Requirements for HIOs to Exchange with External or Non-Participating Providers

HIO with Non-Participating Providers Requirements
Within an HIO
• High availability • Highly effective patient matching and processes to manage patient matching • Strong data use agreements and policies regarding access, ownership, and responsibility • Ability to address a very wide range of evolving interfaces following many standards or no standards at all •
With other entities
• Robust patient matching • Good response times if providers are going to see value (wait for results) • Both well-developed, standardized, well-documented interfaces (think NHIN or state shared services) as well as simple interfaces (think NHIN Direct) and portals • Ability to combine specialty networks (such as Surescripts and Quest results hub) with local instances of the same stakeholder (such as local pharmacies and local diagnostic labs) • Must be able to work external connections into a business model that may be developed for HIO participants

IDN with External Healthcare Delivery Requirements

IDN with External Healthcare Delivery Scenario
• Independent culture of internal IT and business problem solving • Highly evolved technical solutions for organization-specific operations needs • May be unwilling to engage in public problem-solving strategies due to highly competitive nature of their business and failing margins • May be unsure of the value of “community” problem solving • May feel they meet the definition of meaningful use already • Often have connections already with “closely held” partner organizations • Must solve an already-identified specific business need

- Unwilling to pay for a service unless there is evidence that there will be a return on investment

Urban-area HIOs are organizations formed to fill a community need to move health information amongst organizations. Characteristically, these organizations are fast to adopt technology standards, such as the Nationwide Health Information Network's CCD implementation specifications. They are also organizations that have very lean budgets – the purchase of any technology solution is related to the amount of value created by the cost. These organizations are also typically using technology that would readily adapt to a web services style query to retrieve information from the State's core registry services. All of the State's existing community-based HIOs (and many of the IDNs) are prepared to use the State registry service in order to identify the end points for delivery of secure messages of all types. Currently, HIOs are limited in their ability to deliver health data to providers listed in their own records. The State registry would provide a needed resource for connectivity to providers outside existing HIO and IDN networks.

The HIOs business models are predicated on moving data across organizational boundaries and improving efficiency of California's Healthcare Delivery System, e.g. notifying care managers of emergency department visits, supporting patient centric chronic disease management initiative, and assisting healthcare organizations to meet new HIT&E standards, and Meaningful Use requirements.

The majority of California's providers serve the urban areas. HIO activities have become more prevalent since the ARRA HITECH legislation passed in February, 2009. HIOs are also seeking sustainability, so their plans include expansion to many more organizations than they currently serve.

Given these facts, an effective strategy for Cal eConnect in the Urban HIO suggests three strategic approaches:

1) support the development and/or expansion of HIOs in urban areas, in conjunction with other organizations, to rapidly expand interoperability;

2) support interoperability and the exchange of information at transfers of care through the infrastructure provided by Core Services; and

3) support better access to electronic information through clearinghouses that enable business processes offered as Business Services.

Urban Market Implementation Strategy for Meaningful Use Achievement

Market Relevant Meaningful Use Criterion	Urban Capacity
1. Generate and transmit permissible prescriptions electronically	While 97% of retail pharmacies affiliated with large chains are connected to the nation's largest proprietary e-prescribing network, only 62% of independent pharmacies are connected. Notably, in the Los Angeles-Riverside-Orange County network, nearly a third of the 3,000 retail pharmacies are not yet connected to the proprietary e-prescribing network. Even in the urban market, low penetration of EHRs in physicians' offices makes this more difficult. **ACTION:** Meet with Surescripts and HIOs and obtain a detailed needs assessment by county to identify a workplan.
2. Incorporate clinical lab-test results into EHR as structured data	Between 50% and 60% of outpatient laboratory tests in California are performed by either LabCorp or Quest Diagnostics. The remaining tests are performed by over 17,000 hospitals, regional, public health and provider office laboratories, none of which represent significant market share. IDNs with integrated lab networks have more developed capabilities, but this criteria remains relevant and applicable for non-rural HIOs and IDNs. **ACTION:** Work with Quest and LabCorp, as well as HIOs and IDNs to generate a detailed needs assessment by county to identify a workplan.
3. Check insurance eligibility electronically from public and private payers	All of the major payers in California, including MediCal, provide web portals for submitting eligibility inquiries. These portals provide basic eligibility information regarding a member's enrollment status. Some of the portals provide more detailed information about eligibility, including specific covered benefits and/or patient-specific deductible balances. However, this infrastructure for electronic eligibility checking remains imperfect because multiple discrete data elements are required to uniquely identify someone and avoid false positive matches in the payer's enrollment database, and many payers do not provide all of the needed eligibility and benefits information via their web portals. **ACTION:** None at this time
5. Provide patients with an electronic copy of their health information/discharge instructions upon request	For many large IDNs and some urban provider offices, this criteria is on the way to being resolved, though many primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). **ACTION:** None at this time

6. Capability to exchange key clinical information among providers of care and patient-authorized entities electronically	There is no universally trusted framework for identity management and authentication of the principals participating in HIE transactions. Where trust relationships exist, they exist only among principals within the same enterprise and among principals in enterprises that have bi-lateral information-exchange agreements, or among principals in enterprises that participate in a regional HIO with a trusted identity-management framework. **ACTION**: Meet with local HIOs and IDN leadership to determine action plan for Core services.
7. Provide patients with timely electronic access to their health information within 96 hours	For many large IDNs and some urban provider offices, this criteria is on the way to being resolved, though many primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). **ACTION:** Where applicable, coordinate with the MediCal-EHR incentive program to maximize adoption of EHRs in primary care practices.
8. Provide summary-of-care record for each transition of care and referral	Many primary care practices lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR). However, NHIN-ready HIOs and IDNs can meet this criteria. **ACTION:** Coordinate with the MediCal-EHR incentive program to maximize adoption of EHRs in primary care practices. Coordinate with local HIOs and IDNs to help standardize transmission of transition data and strategy for Core Services.
9. Capability to submit electronic data to immunization registries and actual submission where required and accepted	6 of California's 9 immunization registries serve primarily urban communities, and none has the capacity to accept immunization data via Health Level 7 (HL7) messaging directly from EHRs. As a result, even as physicians develop the capacity for submission, until the state is able to support the nine registries in exchanging data, the value of the information submitted to each registry region remains locked within that region. **ACTION:** Coordinate with CDPH and CAIR to support cross-registry data exchange for all California immunization registries.
10. Capability to provide electronic submission of reportable lab results to public health agencies and actual submission where it can be received	Currently no Public Health Agencies have little or no infrastructure to support receipt of electronic submission of lab reports. In addition, privacy and security policy issues need to be addressed to support this process. **ACTION**: Coordinate with CPDH as they work to implement CalREDIE (California Reportable Disease Information Exchange).

11. Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	Currently no Public Health Agencies have little or no infrastructure to support receipt of electronic submission of lab reports. In addition, privacy and security policy issues need to be addressed to support this process. **ACTION**: Coordinate with CPDH as they work to implement CalREDIE (California Reportable Disease Information Exchange), and with CDC as federal electronic reporting standards evolve.
12. Generate lists of patients by specific condition to use for quality improvement, reduction of disparities, and outreach	This is a function of specific EHR systems or disease registries operated by vendors and/or consortia of providers. **ACTION:** None at this time.

Unaffiliated Providers Scenario

"Unaffiliated providers" comprise solo practices and small group practices of 5 or fewer MDs. These business entities typically have limited I.T. resources to build and maintain data interfaces for their EHRs. To achieve interoperability with other enterprises (practices, labs, pharmacies, etc.) they typically rely on the intrinsic capabilities of their I.T. products and on the bundled services of their I.T. vendors.

According to the Operational Plan, small primary care practices with fewer than 10 physicians represent over 60% of active primary care physicians and provide the majority of outpatient care in California. Staff at the California Association of Physician Groups (CAPG) estimated that approximately 20% of primary care physicians are not affiliated with an organized group such as an IPA, IDN or large medical group. These providers have special barriers with respect to HIE, including low IT adoption and sophistication, an unsophisticated understanding of and enthusiasm for Meaningful Use, single referral relationships, lack of working capital, and low vendor interest. Additionally, their lab and prescription functionalities are much less likely to be integrated.

Individual and small practice providers currently have very little exchange capacity but need to gather critical data about their patients and push data to other appropriate parties. For many of these providers, the push to implement credentialed EHR systems is the first stop towards HIE.

In the near term, it is unlikely that health I.T. products will provide "out of the box" data-interchange capabilities, given the absence of plug and play standards that are supported across enterprises (or the requirement for such standards in the current EHR-certification criteria). At the same time, it is unlikely that I.T. vendors will have the capacity or willingness to build custom data-interchange capabilities for small practices at a cost that is affordable to them. Hence, in the near term (1-3 years), unaffiliated practitioners will be challenged to leverage the core services that are envisioned, because they will lack the resources to interface their EHR systems to these services. In the longer term, it is anticipated that EHR vendors will incorporate connectivity with the core services into their products, as their customers (large and small practices alike) perceive the value of the core services as a means to communicate with each other and with other types of organizations (hospitals, labs, immunization registries, etc.)

Unaffiliated Providers Requirements
• Limited I.T. staff; development and operation of data interfaces must be handled by I.T. vendors or by low-cost consultants • Their start-up and on-going costs of data interfaces must be moderate • Need to interface with other unaffiliated providers as well as with large organizations (IDNs, national labs, large payers, etc) • The start-up and on-going costs to their trading partners of interfacing to these practices must be small • Must start with PM and EHR implementation first, then seek services for HIE.

Given this dynamic, an effective strategy for Cal eConnect to engage unaffiliated practitioners in the near term may be to offer "bridging" technologies between EHRs and the Core Services-HIE services. These technologies will have two key characteristics:

1. They will be compatible with those capabilities of EHR systems that are required in stage-1 certification criteria or otherwise likely to exist in the near term, and
2. They will enable some of the health information exchanges that are required under stage-1 meaningful use criteria.

Although a variety of such technologies may be conceived, one specific offering could be a "health internet service provider" (HISP). The HISP would be an ASP service accessible to unaffiliated practices as a web portal. The service would provide a secure "inbox" and "outbox" for HIE transactions, allowing the appropriate data files to be uploaded from or downloaded to the local file system as discrete files. It is not unlikely that, under the stage-1 EHR certification criteria, EHRs will able to use the local file system for importing and exporting clinical summaries, immunization records, and ambulatory quality measures. In order to interface to the core services and to the other organizations that use these services, the HISP will provide trusted authentication on behalf of unaffiliated practitioners, will create and maintained the practitioners' Provider Directory Entries, and will enable practitioners to search for counter-parties to HIE transactions using the Entity Registry Service and various Provider Directory Services.

Under this model, the HISP will enable unaffiliated practitioners to conduct the following transactions related to meaningful use:

1. Secure exchange of clinical summaries with any other organization that is able to use the Core Services – HIE Services for identity management and directory services, whether via the HISP or via data interfaces built directly into their I.T. systems
2. Secure upload of an updated patient summary record to one of several untethered PHRs (Google, Microsoft, etc.) that is compatible with the Core Services-HIE Services
3. Secure download of lab results with laboratories that are compatible with the Core Services-HIE Services (possibly including the business lab clearinghouse service)
4. Secure submission of immunization records to an appropriate immunization registry, and viewing or retrieval of immunization histories from the appropriate immunization registries (assuming the registries will be compatible with the Core Services-HIE Services)

5. Secure submission of ambulatory quality measures to CMS via the NHIN-gateway mechanisms that CMS is currently proposing.

Conducting these transactions via the HISP will require practice personnel to import and expert files between the EHR and file system and certainly will not be as efficient as a direct interface between the EHR to the Core Services-HIE services. However, if Cal eConnect can provide such a HISP service in conjunction with the core Services-HIE services, it could prove very valuable for enabling unaffiliated practitioners to securely exchange health information with large ambulatory practices, hospitals, laboratories, and other participants prior to the time that EHR systems include built-in interfaces to the Core Services-HIE services .This is an area of further research.

Given the above, for this market, Cal eConnect should coordinate with the RECs to make sure that these providers are being educated and supported in their adoption of EHRs but as a short-term value added activity Cal eConnect can explore this HISP as a line of business, which will require an RFP process, and 2 FTEs. A consultant can be hired to develop the HISP option, which can then be managed by a Program Manager. This is a secondary offering that provides an opportunity for the unaffiliated market but is not necessarily a primacy priority for Cal eConnect. This HISP would also potentially use the Lab Clearinghouse Routing Service that is contemplated as a business or value-added service.

Urban Market Opportunity By County

	Population	MDs (all specialties)	MDs (GPs, Family Medicine)	Hospitals
Alameda/Contra Costa	2,647,912	5232	487	22
San Francisco	856,095	3000	154	11
San Mateo	754,285	1560	96	7
Santa Clara	1,880,876	4326	303	11
Santa Cruz	272,201	451	81	3
Sacramento	1,445,327	2865	268	10
Marin	260,651	690	57	3
Los Angeles	10,441,080	18288	1795	94
Riverside/San Bernardino	4,212,684	4633	2665	33
Orange	3,166,461	5827	730	28
San Diego	3,224,432	5872	631	21
Venrtura/Santa Barbara	1,279,194	2110	330	11

Alameda/Contra Costa

Alameda/Contra Costa providers are already sharing data including lab results, e-prescribing, and have a large number of physicians utilizing EHRs. In addition there is an HIO (ACCHIO) in the planning stages, supported by key stakeholders in the community. The effort is sponsored by John Muir and is coordinated with the Alameda Contra Costa Medical Society. Kaiser, Sutter, and CHW are planning on participating in the HIO while retaining their own HIE structures. Several of the IDNs in the community are NHIN enabled and would be first movers to connect to

the Core Services. The market opportunity is to secure the support of the 22 hospitals and 5000 physicians for the use of the two core services by 2011.

San Francisco

San Francisco providers are already sharing data including lab results, e-prescribing, and have a large number of physicians utilizing EHRs. In addition there is HIO in the planning stages (SFHex), which is coordinated by the San Francisco Medical Society. The 15 member board includes UCSF, Sutter, and CHW which are planning on participating in the HIO while retaining their own HIE structures. The Board also includes members of the County Public Health and Community Clinics ,which also have EHRs and are actively sharing data within their own systems. Independent Physicians are represented on the Board through the three IPAs and two solo practice providers. The market opportunity is to secure the support of the 11 hospitals and 3000 physicians for the use of the two core services by 2011.

San Mateo

San Mateo country has a long established reputation as a technology leader. As grant awardees for several state grants, one of the first MediCal e-Rx pilot and a Beacon applicant the community will build upon and accelerate the work of two highly engaged coalitions: the long-standing Hospital Consortium of San Mateo County (HCSC), founded in 1978 and the newly formed Community Health Network for the Underserved (CHNU) due to their demonstrated expertise in two areas of project focus: interoperability and diabetes chronic disease management. These existing coalitions bring organizational and political capacity and critical know-how to the project, as well as long-standing relationships that will facilitate a quick start for the community. The market opportunity is to secure the support of the 7 hospitals and 1500 physicians for the use of the two core services by 2011.

Santa Clara

Early in 2006 the Smart Valley HIO closed its doors due to an inability to capture the provider market for health information exchange. There is no existing coalition in the County but a number of providers are experienced in planning for HIE. These 11 hospitals and more than 4000 physicians are implementing EHRs and would be likely candidates for the core service offering through their IPA or IDN.

Santa Cruz

With over 300 providers, 42 specialties, and 100 locations, PMG is the organization that supports and connects them all to each other via the Santa Cruz HIE, powered by Axolotl's Elysium Exchange. The Santa Cruz HIE is the longest running, successful HIE, Clinical Networking™ the local Independent Practice Association (IPA), competing hospitals, County Health Clinics, national and local reference labs, imaging centers and several safety net clinics. The market opportunity is to secure the support of the 3 hospitals and 450 physicians for the use of the two core services through the Santa Cruz HIE by 2011.

Sacramento

Although there is no formal organized HIE in Sacramento County, there are more than 10 Hospitals including Sutter, Kaiser, CHW and Adventist Health System and 4 IPA with more than 2800 physicians. The County Health System is actively involved in HIE with community providers and most the hospitals are in some form of EHR deployment. The market opportunity is to secure the support of the 10 hospitals and 2800 physicians for the use of the two core services through the IDNs and IPAs by 2011.

Marin
The Marin IPA and the local billing company are coordinating to develop an HIE that is already providing billing and EMR for most of the non-Kaiser physicians. The local district hospital, community clinics and county are participating. The market opportunity is to secure the support of the 3 hospitals and 690 physicians for the use of the two core services through the developing HIE by 2011.

Los Angeles
Long Beach Network for Health is currently operating in Long Beach and is extending its services outside of Long Beach to the broader LA County. The existing 90 Hospitals and over 18,000 are in various stages of EHR implementation and the market opportunity would be to provide the existing HIOs, IDNs and other organized delivery systems with an opportunity to utilize the core services.

Riverside/San Bernardino
The Inland Empire Health Information Coalition has a numerous institutions participating in the HIE including 22 Hospitals, 27 Medical Groups/IPAs, 1 Medi-Cal Managed Care Health Plan, the Riverside County Public Health Department and Clinics, the Visiting Nurses Association, 4,000 practicing physicians in the Inland Empire, and the Riverside County Medical Association and the San Bernardino County Medical Society.

The goal is to connect all hospitals in the Inland Empire in the HIE and quality for ARRA funding. Of the 38 hospitals in Riverside & San Bernardino Counties, currently only 22 hospitals are participating in the HIE discussions. The market opportunity is to begin providing core services to the Inland Empire HIE members and build relationships with the remaining hospitals and physicians in a phase 2 approach.

Orange
OCPRHIO is operating in Orange County in a limited capacity providing some data to six emergency rooms in the County. The County also has a robust and long standing HIE through the County MSI program in which 23 hospitals and 16 clinics. There are several IDNs including some hospitals that serve both LA and San Diego Counties. The market opportunity is to secure the support of the 3 hospitals and 450 physicians for the use of the two core services by 2011.

San Diego
There are several HIE efforts in the very early planning stages. For the 21 hospitals and over 5800 physicians, a sophisticated level of EHR deployment has occurred thus far. While there is no organized central HIE effort, there is a market opportunity to secure the support of the IDNs, IPAs and County Health Services for the use of the two core services by 2011.

Ventura/Santa Barbara
The failure of the Santa Barbara Exchange is a well documented event that would make another attempt at exchange difficult for this community. With 11 hospitals and a little over 2000 physicians, this community will need to be sold on the value of core services and is not a likely market opportunity in the early phases of the program.